

**Mg/Ca-temperature calibration for
the planktic foraminifer
Neogloboquadrina dutertrei developed
from live culture experiments**

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Reconstructions of past ocean thermocline structure are hampered by the lack of culture-based calibration relationships for thermocline-dwelling planktic foraminifera. *Neogloboquadrina dutertrei* is a non-spinose planktic foraminifer that is abundant in tropical to mid-latitude regions. Its average depth habitat ranges from 50-150 m, with peak abundances commonly associated with the depth of the chlorophyll maximum. The ability to use the Mg/Ca composition of *N. dutertrei* is currently hampered by very sparse culture-based calibration data, which are limited because they are difficult to maintain in the laboratory. We extend the existing culture based Mg/Ca-T calibration data across a broad temperature range (12°, 16°, 18°, and 22°C). Specimens were collected via plankton net from the Southern California Bight (Summer, 2013) and cultured at the Wrigley Marine Science Center, Santa Catalina Island, California. We use improved analytical methods to obtain trace element analyses. By culturing specimens in labelled seawater, we identify discrete portions of calcite that grew in culture, and analyse them using LA-ICP-MS. Initial results (12°C, 16°C, and 22°C) suggest a lower temperature sensitivity for this species (6% change in Mg/Ca per °C) compared to previous calibration studies (7-10% change in Mg/Ca per °C).